

Northgate Stakeholders

Thornton Creek Water Quality Channel

Seattle Public Utilities

October 18, 2005

Agenda

- Review Stakeholder Advice (Miranda)
- Preliminary Engineering (SvR)
- Cost Estimate Updates (Tom)
- Design Modifications (Miranda)
- Permitting (Miranda)
- Coordination with Lorig (Tom)
- Schedule (Tom)
- Art Concept (Benson)

Project Goals:

- 1. Improve water quality**
- 2. Reduce flow volumes**
- 3. Provide open space**
- 4. Neighborhood revitalization**



Photo rendering by JPMAN HARTFIELD

2004 Stakeholder Advice

- Moving water
- Aesthetics
- Safety
- Pedestrian movement
- Water quality
- Cost controls

Background - 2004

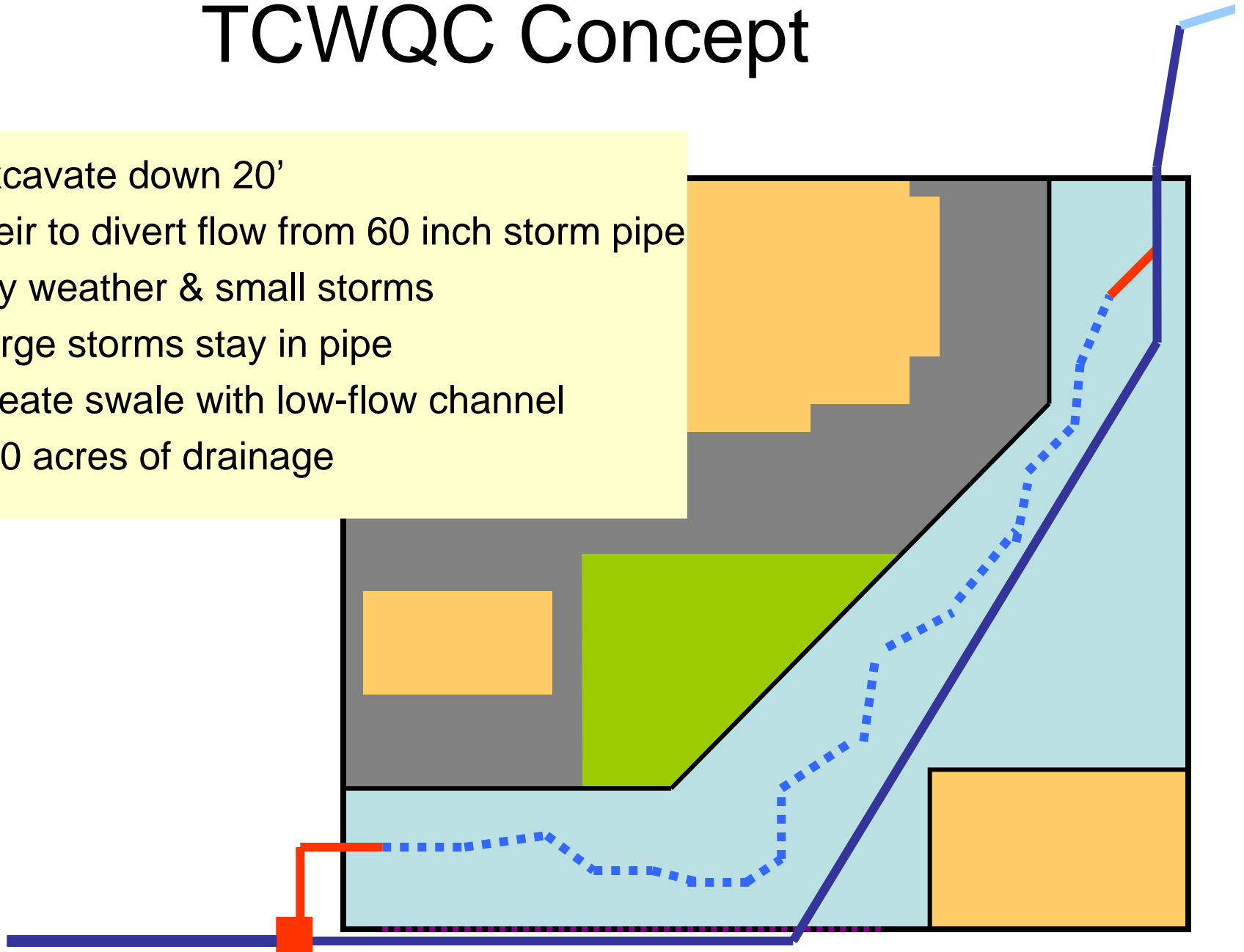
- Dec 2003 - Council directed SPU to evaluate 3 alternatives for the South lot site
- 1st Q 2003 - SPU conducted technical analysis to determine feasibility, water quality, and cost estimates
- May 2004 - The Northgate Stakeholders group formally recommended the Hybrid option of the TCWQC
- May 2004 - AMC approved the project with a \$7.2 million budget
- July 2004 - Council approved \$7.2M & authorized SPU to purchase property and coordinate with Lorig Associates.
- Dec 2004 - Purchased property

Background - 2005

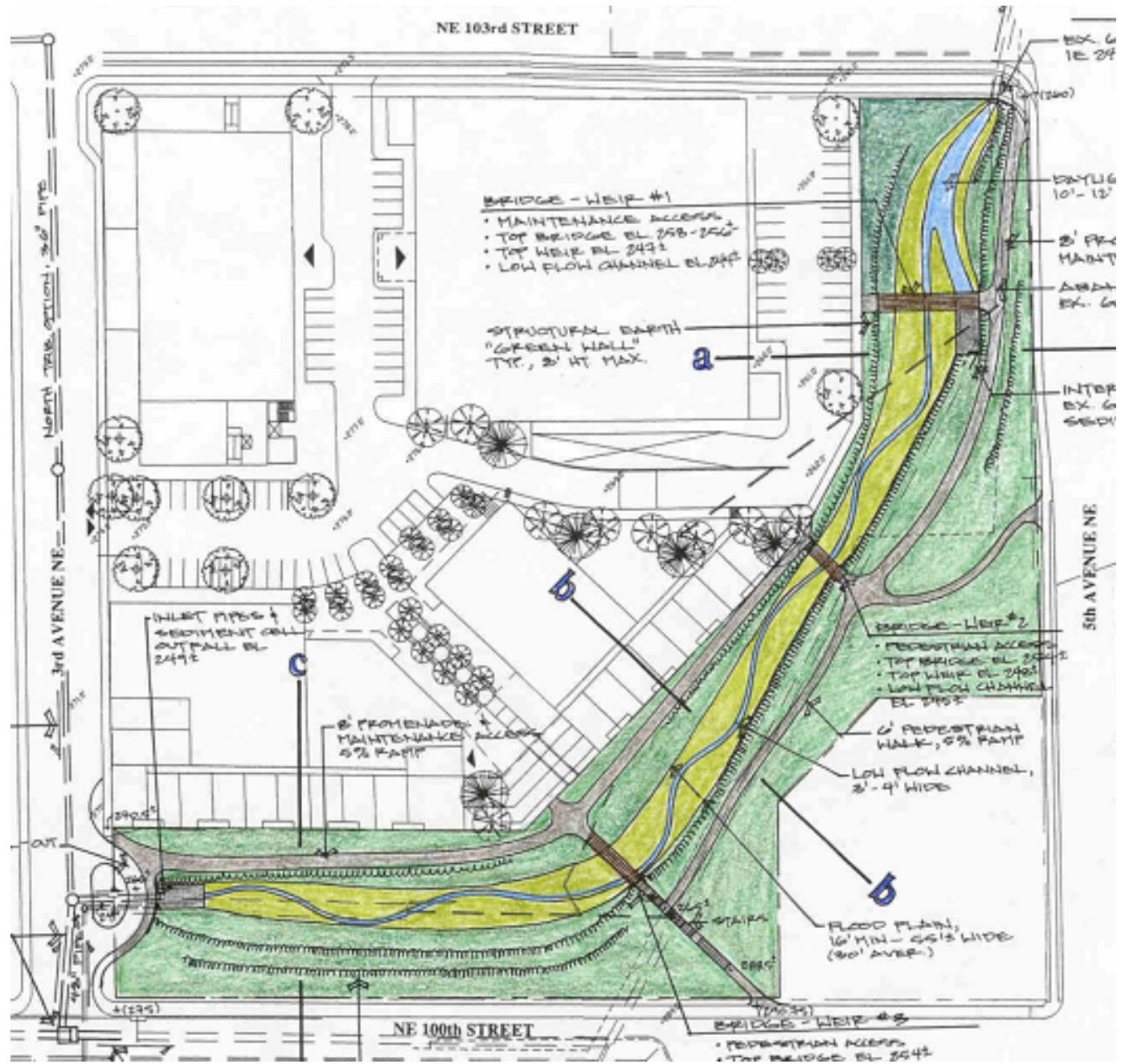
- Awarded Ecology low-interest loan for \$6.8 million
- Determined state and federal permitting
- Signed MOU with Lorig outlining mutual easements
- Completed preliminary engineering
- Complete 60% Design during 1Q06.

TCWQC Concept

- Excavate down 20'
- Weir to divert flow from 60 inch storm pipe
- Dry weather & small storms
- Large storms stay in pipe
- Create swale with low-flow channel
- 680 acres of drainage



Hybrid



Preliminary Engineering Results

Water Quality Design Criteria

-- Guidelines from Department of Ecology, University of Washington

- 91% annual volume diverted for treatment
- Target 10 inch treatment depth
- 9 minute residence time
 - Minimum 30-foot wide channel
 - Minimum 300-feet long channel
 - .7% slope

Preliminary Engineering Results

- Field survey provided accurate grade elevations – up to two foot difference)
- Reduced diversion weir height based on new survey elevations to manage flood risk
- Geotechnical – need to strengthen walls
- Additional excavation, shoring and retaining walls
- Adjustments to meet adjacent property grades

Flood Risk Analysis



Impacts to Design

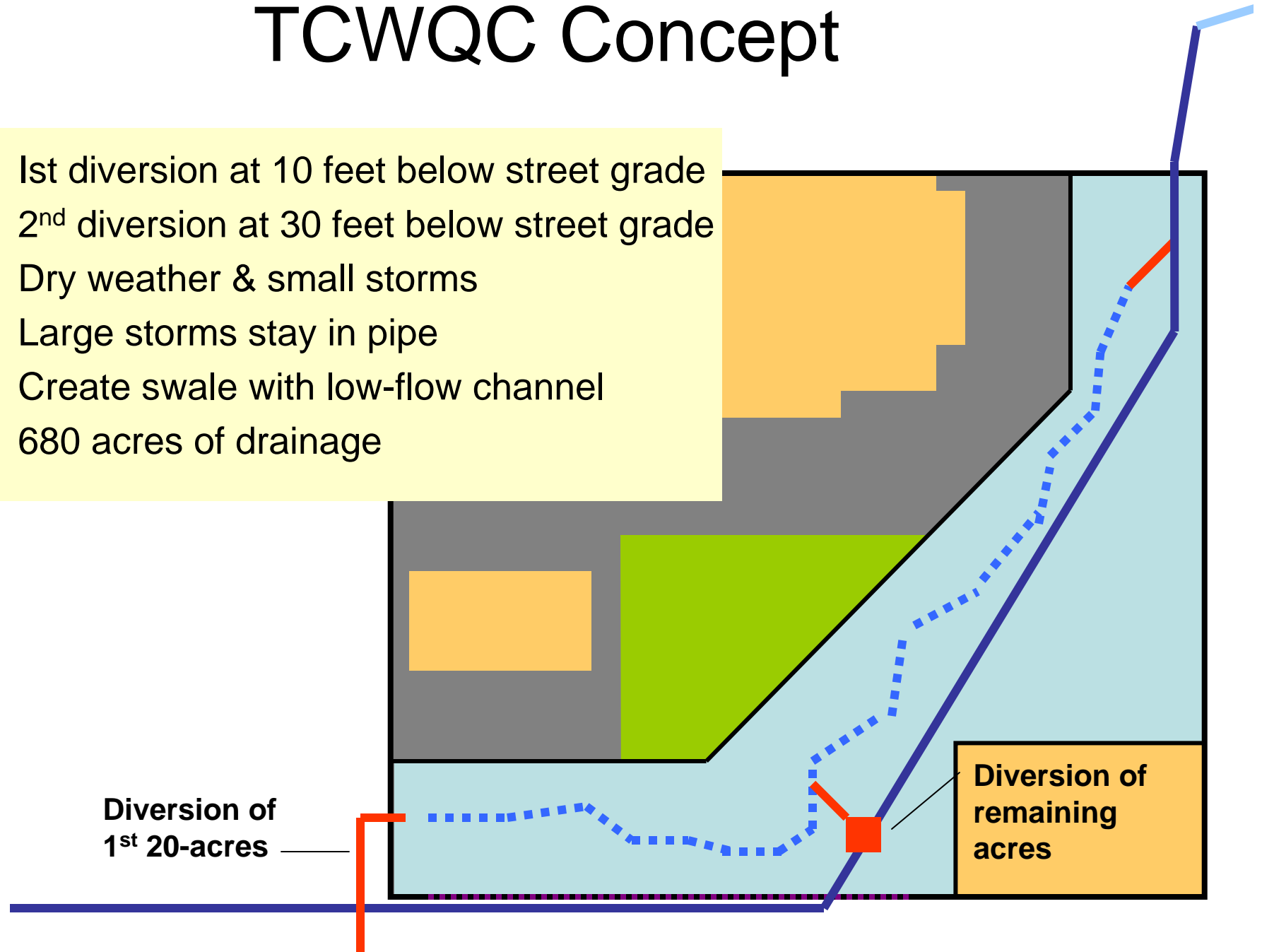
- Deeper channel
- Higher retaining walls up to 12 feet.
- Impacts to moving water
 - Flat channel (**only 2-foot drop**)
- Impacts to public safety and aesthetics
- Nearly doubled construction costs - **\$3.3M to \$6.3M**

Reason for Hard Cost Increases

- Cost of Mobilization: \$300K
- Cost of TESC: \$250K
- Cost of Earthwork: \$12.50 to \$16.50 CY
- Cost of Wall/Shoring: \$1M
- Cost of Landscape/Amenities: \$550K
 - Safety rails
 - Irrigation
 - Improved site lighting

TCWQC Concept

- 1st diversion at 10 feet below street grade
- 2nd diversion at 30 feet below street grade
- Dry weather & small storms
- Large storms stay in pipe
- Create swale with low-flow channel
- 680 acres of drainage

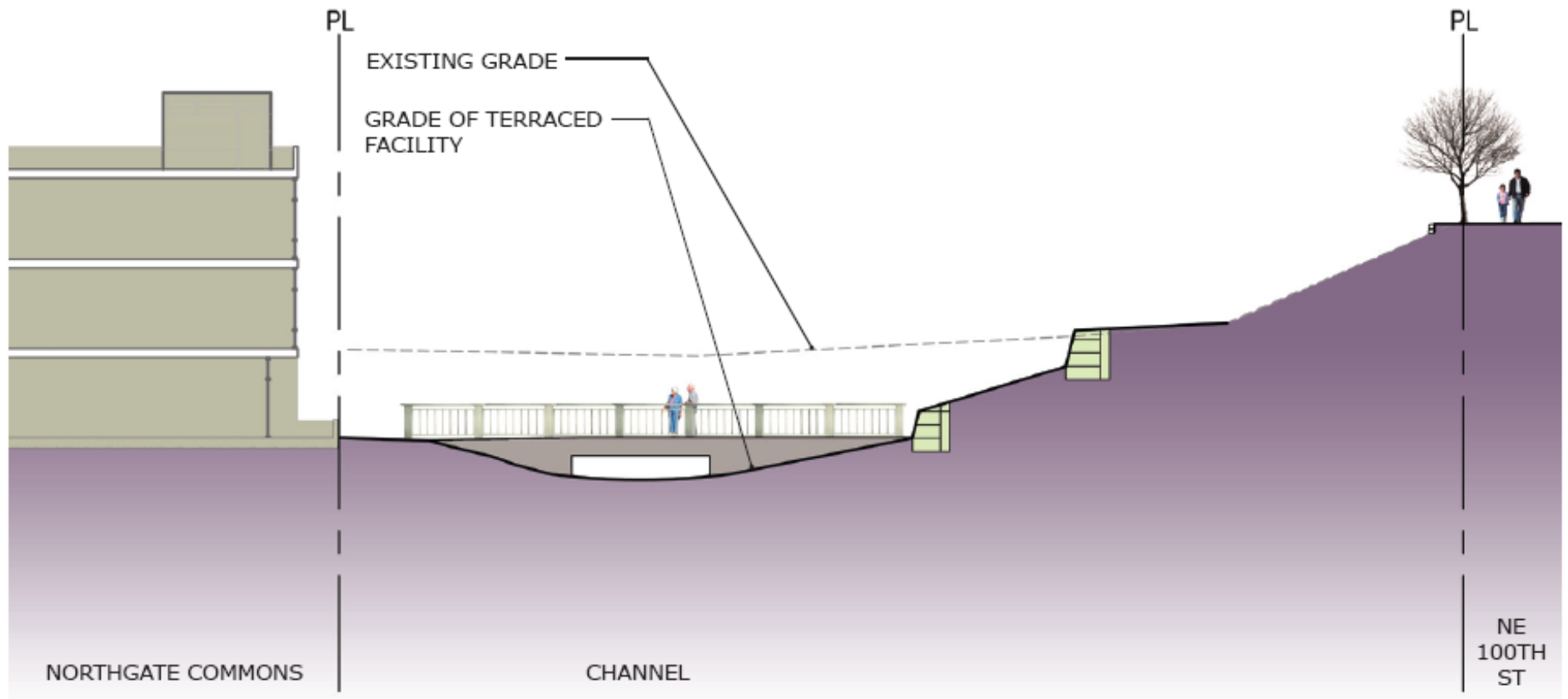


Design Modifications

- Two diversion systems
 - One at approx. 10 feet below grade
 - Second at approx. 30 feet below grade
- Reduced shoring and retaining walls
- Reduced excavation
- Increased aesthetics and safety
- Maintains water quality design criteria
- Maintained ADA access throughout the site

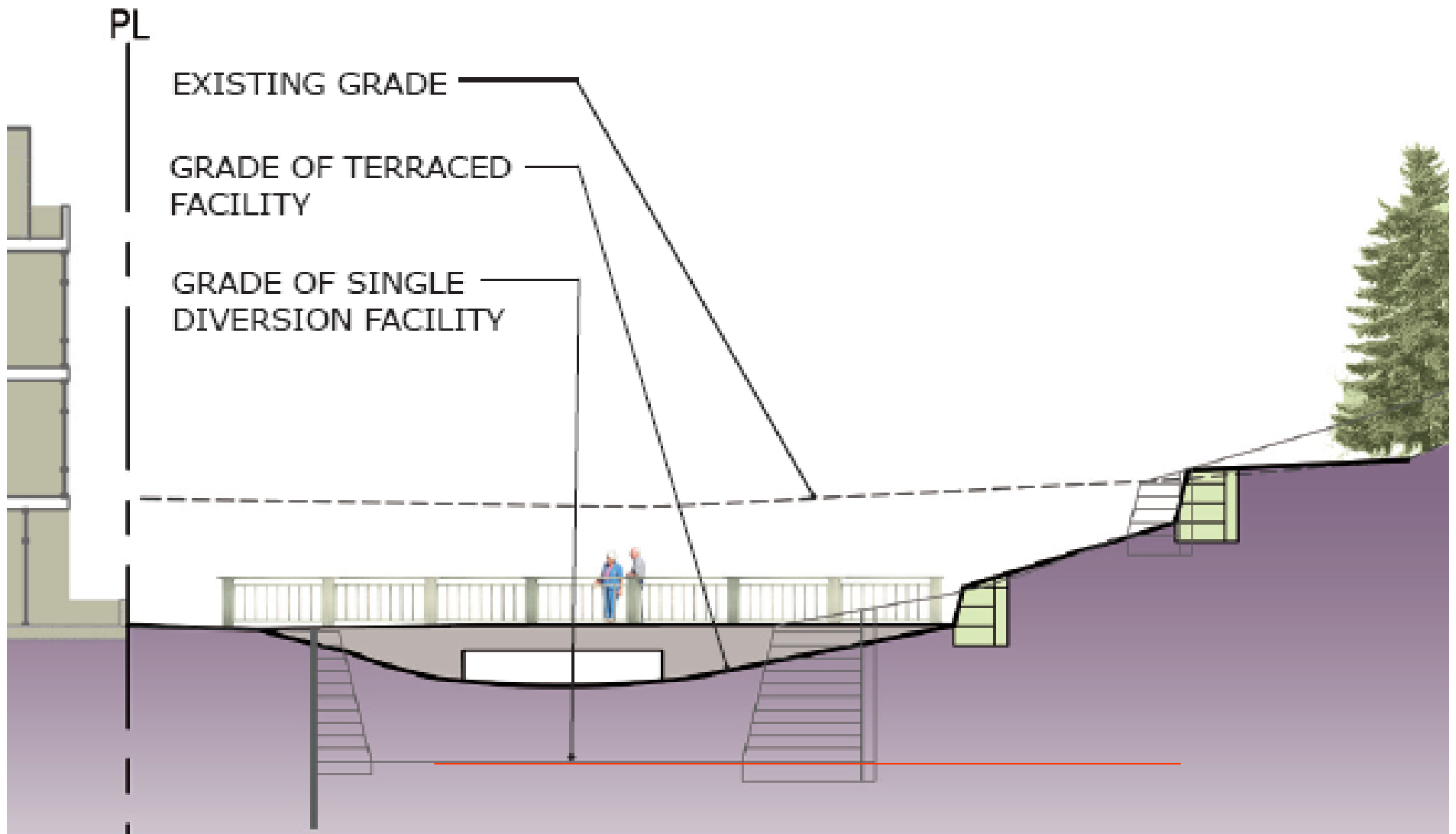


Section A

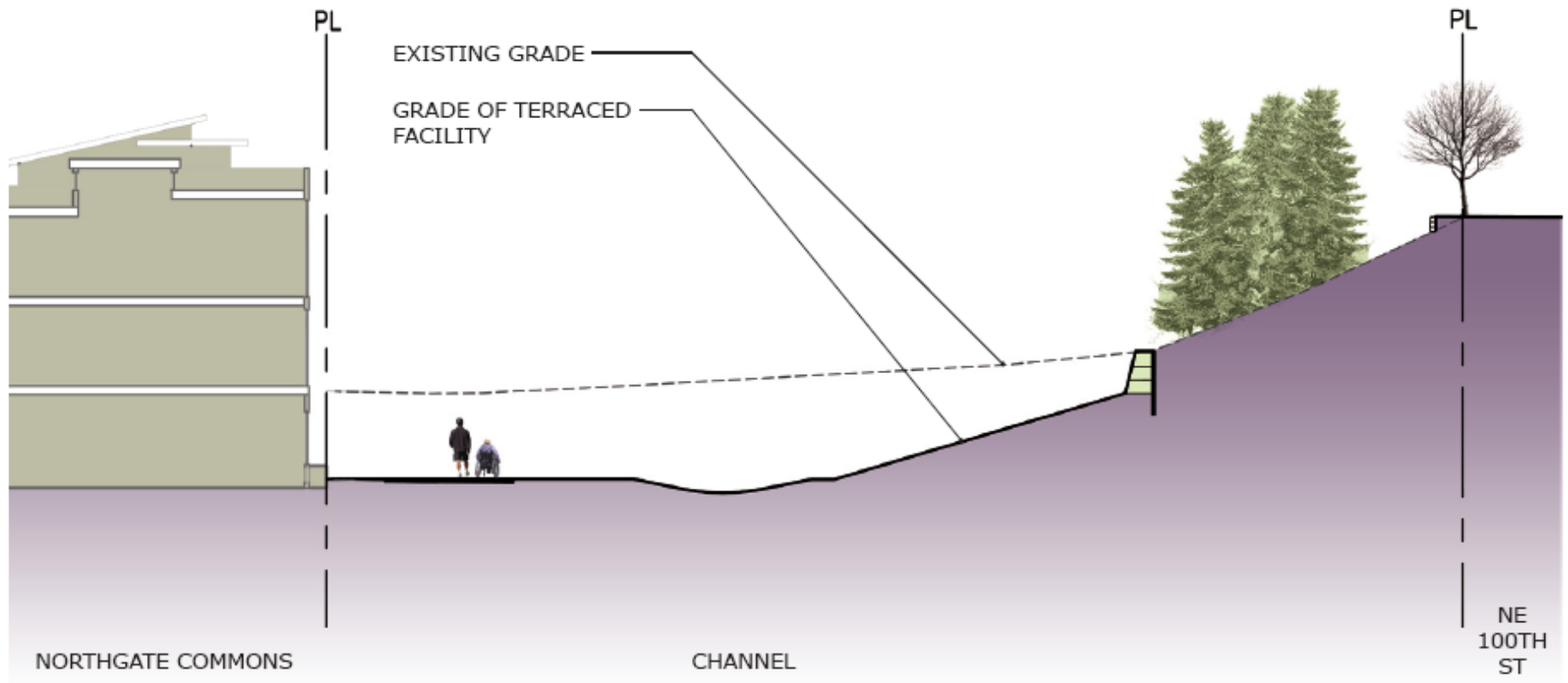


THORNTON CREEK WATER QUALITY CHANNEL

Section A (with single diversion)



Section B



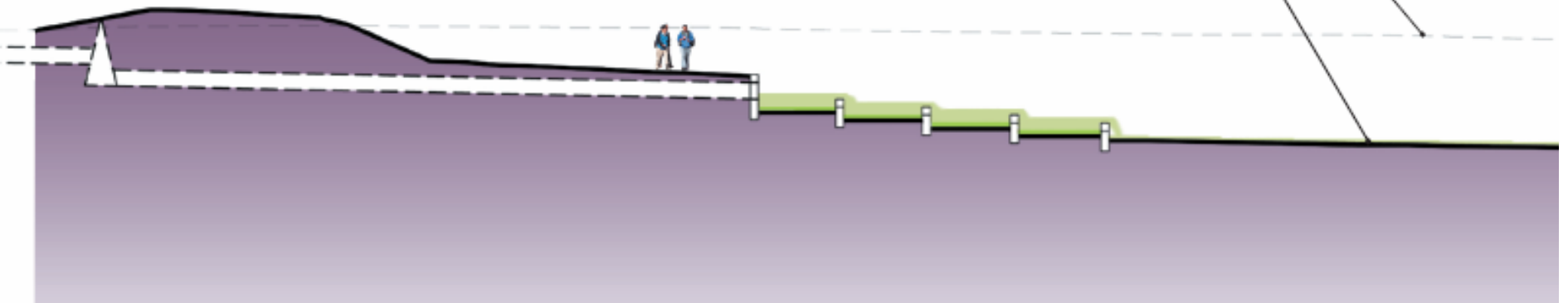
THORNTON CREEK WATER QUALITY CHANNEL
TERRACED FACILITY
SECTION B

Cascade Swale



EXISTING GRADE

GRADE OF TERRACED
FACILITY



Cost Controls

- Reduces construction costs significantly
 - \$3.3 million for original estimate
 - \$6.3 current estimate for single diversion
 - \$4.2 estimate for dual diversion option
- Even with these cost savings, still requesting an increase of \$1.8 million or additional 25%

2004 Stakeholder Advice

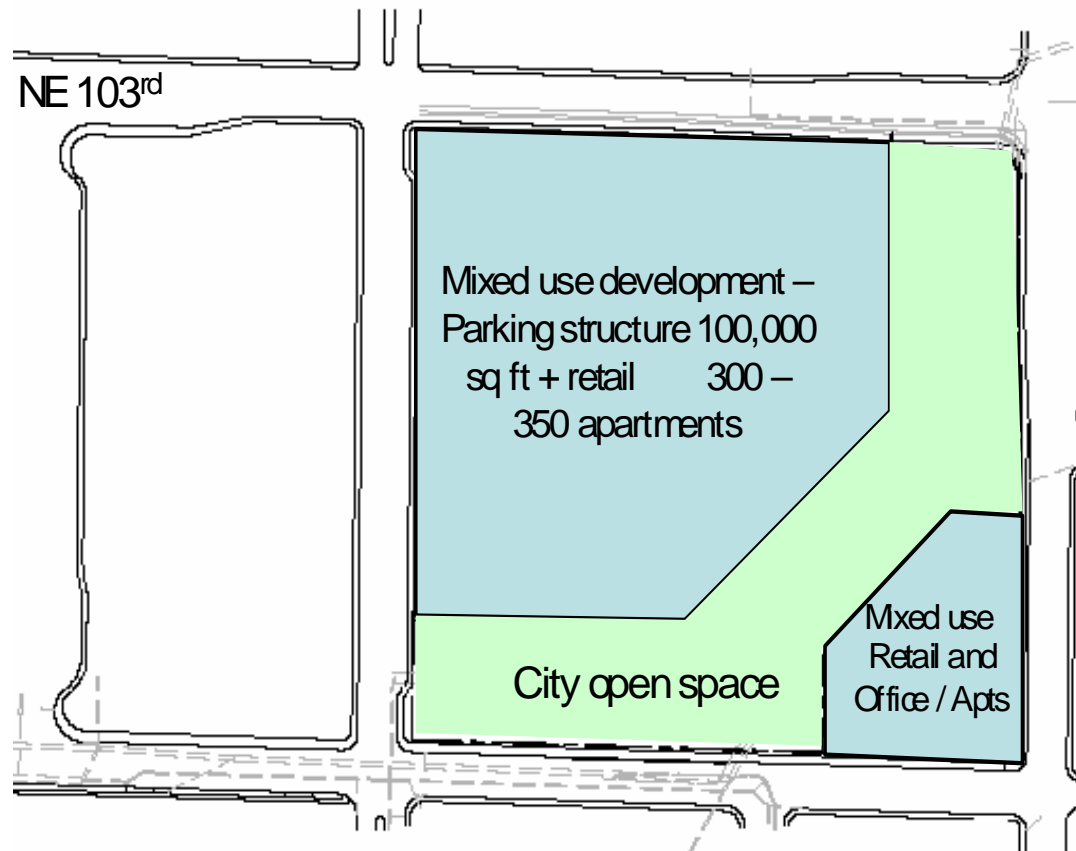
- Moving water – more cascading flow
- Aesthetics – softer grades
- Safety – closer to street grade
- Pedestrian movement – maintained
- Water quality – maintained
- Cost controls – cost increases managed

Permitting

- Army Corps
 - No permit needed because diversion weir not considered fill
- WDFW
 - Construction HPA
 - Manage timing of weir construction to protect downstream habitat
 - No constructed barriers created by project

Construction Coordination

- Coordinated Earthwork in 2006
- King County, Lorig, ERA Care, SPU
- January – Grading plan submittal



Project Schedule

- November 2005 - 30% Design
- January 2006 - 60% Design & Permits
- June 2007 - Construction Earthwork
- February 2007 – SPU Contract Signed
- April 2007 - Start Channel Construction
- **November 2007 - Substantial Completion**
- April 2008 - End Construction

Northgate Stakeholders



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